Willemijn Waal

Writing in Anatolia: The Origins of the Anatolian Hieroglyphs and the Introductions of the Cuneiform Script [1]

Abstract

This article argues that the Anatolian hieroglyphic script, which is generally thought to have been an invention of the second half of the second millennium BCE, has its origins already in the late third/early second millennium BCE. The argument that Anatolian hieroglyphs are much older than hitherto assumed is based on a wide array of evidence, such as (signs on) seals and textual data from both Anatolia and the Aegean.

  These data imply that Anatolian hieroglyphs, like virtually any other writing system, started out as a simple pictographic script used for basic economic and administrative records and over time developed into a full-fledged writing system, rather than being 'invented' in the Hittite Period. It is demonstrated that the enigmatic *iṣurtum*-documents found in Old Assyrian texts refer to documents written in Anatolian hieroglyphs, similar to the Giš.HUR/*UṢURTUM*/*gulzattar* documents in the Hittite Period. These documents, which have not been preserved because they were written on the perishable material wood, contained those types of texts that are conspicuously absent from the Old Assyrian and Hittite Periods. Since the Anatolians already had a script of their own, the cuneiform script never became firmly rooted within Anatolian society, and its usage was restricted to certain domains. This would explain why the cuneiform script was introduced (and subsequently abandoned) twice in Bronze Age Anatolia, whereas the Anatolian hieroglyphs continued to be used well into the first millennium BCE.

Keywords: origin of Anatolian hieroglyphs, Hittite cuneiform, wooden documents, Giš.HUR, *IṢURTUM*

0. The Introduction(s) of the Cuneiform Script into Anatolia

The first written sources stemming from Anatolia are the cuneiform tablets belonging mainly to the archives of Assyrian merchants, who settled in Anatolia in the beginning of the second millennium BCE. The tablets are written in the Old Assyrian cursive, the script

used in their home town of Assur. After the end of this period around 1700 BCE,[2] this variant of the script is no longer attested and was apparently abandoned.[3]

After probably less than a century, the cuneiform script reappears in Anatolia during the Hittite Old Kingdom. This script was a variant of the Old Babylonian cursive used in Northern Syria, which is quite distinct from the Old Assyrian ductus. It is generally assumed that king Ḫattušili I (ca 1650–1620 BCE) brought the script (and scribes) back to Ḫattuša from his Syrian campaigns. This cuneiform tradition also was relatively short lived: After the fall of the Hittite Empire around 1180 BCE, it disappears again from Anatolia without a trace.

An important question when addressing these two introductions of the cuneiform script in Anatolia is whether this script was introduced to an illiterate society, or whether the Anatolians already knew a (rudimentary) form of script, which was written down on perishable material (wood) and has therefore not survived the ages. The idea that the Anatolians already had a script of their own, namely the Anatolian hieroglyphs, which are well attested in the Hittite Empire Period, was popular in the 1940s and 1950s, but the current *communis opinio* is that Anatolia was basically an illiterate society. This paper addresses this issue anew, arguing for the existence of some form of indigenous script in Anatolia already at the beginning of the second millennium BCE.

1. The First Introduction of Cuneiform into Anatolia

At Kaneš (modern Kültepe) altogether some 23,000 documents have been excavated, of which a little more than 4000 have been published. The majority of these texts are addressed to and/or written by Assyrian merchants, who corresponded with their colleagues and families in their home town of Assur. In addition, however, a limited number of cuneiform tablets written by Anatolians have been found. Within this group one can distinguish between private and state documents.

1.1. Private Documents Written by Anatolians in Cuneiform

Recently, Michel (2011) has provided a useful overview of the archives of Anatolians found at Kültepe, based on the material presently available. The site reports relate that, apart from a very few tablets found scattered on the city mound, the Anatolian documents were found in the archives of houses within the lower city, where the Assyrians lived. These houses, some of which are quite large, seem to belong to Anatolians who traded with the Assyrians (ibid. 108). The Anatolian archives in the lower city are not always strictly separated, documents of Assyrians and Anatolians having been found within the same building (ibid. 101).

---

[2] For this dating, see Barjamovic et al. (2012: esp. 40, 51).

[3] It is not to be excluded that the cuneiform script was still used by some individuals in Anatolia. Recently, Barjamovic et al. (2012: esp. 78–81) have argued that some of the Assyrians may not in fact have left Anatolia, but were absorbed into Anatolian society. In any case, it seems that the regular practice of writing in cuneiform on a large scale was abandoned.

Based on the information at our disposal, the Anatolian archives seem to contain predominantly loan and purchase contracts, as well as contracts concerning family matters.[4] The Anatolian loan contracts are somewhat distinct compared to the contracts composed by Assyrian merchants, mainly with respect to their calendar and dating. The loans are mostly made out to Anatolian colleagues, only a few loan contracts mentioning Assyrian debtors. The family contracts also concern Anatolian affairs, revealing traditions that differ from those found in the Assyrian family contracts.

The fact that a tablet deals with strictly Anatolian affairs and only mentions Anatolian names does not, of course, automatically imply that it was written by an Anatolian, as it may have been written by a (hired) Assyrian scribe. There are, however, a number of peculiarities within these Anatolian documents that indicate that their scribes were in fact writing in a language other than their native tongue. Some of these idiosyncrasies, such as gender and case confusion and the occasional nominative ending in -(a)š on Anatolian names, make it very plausible that their native tongue was Hittite or Luwian (e. g. Kienast 1984: 31–35; Dercksen 2007: 27; Kryszat 2008; Michel 2011: 105–107).

It thus appears that some Anatolian merchants living in the lower town of Kaneš mastered the Old Assyrian language and cuneiform script and were able to compose cuneiform documents on their own.[5] This is hardly surprising, considering that the Anatolians and Assyrians had extensive contacts with each other. Assyrian merchants, e.g., could have a (secondary) Anatolian wife and family in Kaneš, and the generation of children who were raised in mixed marriages were in all likelihood bilingual, and may easily have been trained to learn (the basics of) the cuneiform script at home, or in a school at Kaneš.[6]

The percentage of Anatolian documents is significantly higher in the later Ib level, where they constitute at least 25 %, than in level II, where they reach less than 5 % (Michel 2011: 105). Though this may indicate that the usage of cuneiform among Anatolians increased, it could also be attributed to the fact that there were fewer Assyrians active in the later period, since the total number of tablets from the Ib period is just a fraction of that from the level II period (Veenhof / Eidem 2008: 46). One has to bear in mind, however, that these numbers are preliminary, since much remains unpublished and they may be subject to change.

Thus, the Old Assyrian script was used by private Anatolians, but this usage seems to have been limited to a commercially active Anatolian elite that lived in the *kārum*-district and was in close contact with the Assyrians. The few examples of Anatolian marriage contracts and testaments show, however, that they could also use the script for internal affairs. As far as is known, it was never used to record their own language.

---

[4] The letters found in the Anatolian archives were all written by Assyrians (Michel 2011: 103).

[5] The Old Assyrian tablet found at Kaman-Kalehöyük mentioning only Anatolian names could be a further example of such texts; see Yoshida (2002).

[6] On learning cuneiform at home in the Old Assyrian Period, see Kryszat (2008: 232) and Michel (2011: 111), with references. On the possible identification of a scribal school in Kültepe, see most recently Barjamovic / Larsen (2008: 150) with references.

1.2. Documents from the Palace Written in Cuneiform

Only a very limited number of texts have been found in the temple and palatial structures on the city mound of Kültepe. These include the well-known letter of Anum-Ḫirbi, the king of Mamma, to Waršama, king of Kaneš. It has been assumed that its scribe was an Assyrian trader (Veenhof / Eidem 2008: 48; Michel 2011: 109–110), although it cannot be excluded that the scribe was an Anatolian.[7] In addition, there are a number of treaties between the Assyrian community and rulers of Anatolian city-states, copies of which have been found in private houses in the lower town. These treaties were clearly written by Assyrian scribes. The same applies to the letter sent by the ruler of Tuḫpiya to an Assyrian merchant (Michel 2011: 109–110). Michel (2011: 109) suggests that these kinds of documents may have been written by official scribes, who were appointed by the palace. In any case, the Assyrian script and language seem to have been the vehicle for the Anatolians' correspondence with the Assyrians and with other Anatolian city-states.

For the internal palace administration on the other hand, the cuneiform script hardly appears to have been used. The only cuneiform documents belonging to the internal palace administration at Kültepe are two lists of personnel (Veenhof / Eidem 2008: 42).[8]

The lack of further administrative documents from the palace is remarkable, even suspicious. How did the local authorities handle their administration? Anatolian society at the time was highly complex and structured, and undoubtedly must have had some system of internal administration, no traces of which have survived for some reason (see also § 3.5, below). It is of course possible that the palace had a non-written administration system, comparable to that of e.g. Arslantepe (Frangipani 2007). However, not only is the palace administration remarkably ill attested, the same applies to the number of contracts recording debts/credits in copper by Assyrians to Anatolians (including the Anatolian palace). Since there was much trade in copper, and certainly not all purchases were paid instantly, it has been assumed that the nature of these transactions or the way they were administered must have been different (Veenhof 1995: 328; see also § 1.7, below).[9]

The striking lack of such debt notes and virtually all palace administration makes one wonder if the missing documents may (at least partially) be identified with the enigmatic *iṣurtum*-documents mentioned in the Old Assyrian texts.

---

[7] Gojko Barjamovic (pers. comm.) suggests that some strange spellings in the text as well as its syntax indicate that it was not written by a native Akkadian speaker. For a recent treatment of the text, see Barjamovic (2011: 205–206 with n. 771).

[8] In addition, we may mention the cuneiform inscriptions on the famous spear head of king Anitta found in the palace of Kültepe and the spear heads with the name of Anum-Ḫirbi coming from Hasancık (Donbaz 1998: 178–181).

[9] Note that in AK6a 109 and 110 large transactions of copper as well as *iṣurtum*-documents are mentioned, but unfortunately the context is not entirely clear; see Larsen (2010: 185–193).

1.3. The *iṣurtum*-documents from Kültepe

As noted above, the idea that the Anatolians already had a (hieroglyphic) script of their own when the Assyrians arrived was previously a popular notion. This assumption was in large part based on the occurrence of a type of document called *iṣurtum* in Old Assyrian documents from Kültepe, which appeared to be used almost exclusively in dealing with Anatolians, as well as the early presence of Anatolian hieroglyphs on seals (see §§ 2.1–2, below). Hittitologists soon made a connection between Old Assyrian *iṣurtum* and the Akkadogram *UṢURTUM* (Sumerogram GIŠ.HUR, Hittite *gulzattar*)[10] occurring in Hittite texts, which designates a type of (wooden) document. Bossert (1952: 172) concluded that the terms referred to documents of native Anatolians and,

> dass die einheimische anatolische Bevölkerung ihre Schriftstücke in Bilderschrift anfertigte, also wirklich „eine Zeichnung zeichnete", denn um diese Zeit müssen die einzelnen Zeichen der hethitischen Hieroglyphenschrift noch in größerem Ausmaße erkennbare Bilder gewesen sein, als sie es zur Großreichszeit waren.

This idea was taken up by several other scholars, including Otten (1964: 14), who noted that 'das früheste Vorkommen der Hieroglyphen, wohl mit symbolhaften Charakter, schon zur Zeit der altassyrischen Handelsniederlassungen, scheint unbestreitbar', although he did not make an explicit connection with the Old Assyrian *iṣurtum*.

This suggestion was later denied, however, among others by Güterbock (1956), mainly because the Anatolian hieroglyphic script was not securely attested before the end of the 16th century. In general, the idea that Old Assyrian *iṣurtum* is to be connected with later Hittite GIŠ.HUR referring to wooden documents written in hieroglyphs has therefore been abandoned. In light of the above and recent new insights regarding Hittite GIŠ.HUR, it seems worthwhile to address this issue anew.

1.4. The Verb *eṣērum* and the Noun *iṣurtum* in Mesopotamian Context

The Old Assyrian noun *iṣurtum*, a dialectical variant of Akkadian *uṣurtum*[11] (Sumerogram GIŠ.HUR), is derived from the verb *eṣērum*, 'to draw, to make a drawing, to mark'.[12] Its basic meaning is 'drawing' or 'plan' and may also occasionally be used metaphorically as 'plan', 'regulation' or 'rule' (Veenhof 1995: 317). Similarly, the verb *eṣērum* may have meanings other than 'to draw' in Old Babylonian, such as 'to fix', 'to book' or 'to scratch out', but it never refers to writing. In Mesopotamian context there is no connection between 'to draw' and 'to write'; the technique of writing – impressing the tip of a stylus into wet clay – was considered different from that of making drawings or drawing lines. Veenhof (1995: 316) mentions two examples in which this is made explicit. In OIP 2 140: 92 a distinction is made between the god Assur, whose image is drawn (*eṣērum*) on the gate, and other gods

---

[10] First suggested by Güterbock (1939); see also Veenhof (1995: 312 with references).
[11] First suggested by Lewy; see Veenhof (1995: 312).
[12] CAD E, 346–348, s.v. *eṣērum*; AHw, 1440, s.v. *uṣurtum*; AHw, 252, s.v. *eṣērum*.

whose names are only written down (*šaṭārum*). Similarly, the Lamaštu text LKU 33 rev. 19 mentions a tablet to be written (*šaṭārum*), on which a crescent and a sun-disc are to be drawn (*eṣērum*). It is thus exclusively in Anatolian context that *i/uṣurtum* and *eṣērum* refer to writing.

1.5. The Noun *iṣurtum* in Anatolian Context

The noun *iṣurtum* is attested referring to written documents some 20 times in Old Assyrian texts. Veenhof (1995) has provided an extensive overview of these occurrences, so that only his main conclusions need be reiterated here.[13] First, nearly all attestations of *iṣurtum* concern a legally valid document made out to an Assyrian supplier or creditor by an Anatolian person or palace, in which the latter acknowledges debt (Veenhof 1995: 326). The *iṣurtum*-documents are mentioned in personal memoranda listing debts, whereby a distinction is made between later deliveries and older, already existing claims that are recorded in an *iṣurtum*, e.g.:

1. CCT 1, 33b 1–12
  1   8 ^{1}/$_3$ *ma-na* 2 LÁ ^{1}/$_4$ GÍN
         KÙ.BABBAR *ša i-ṣú-ur-tí-šu*
         [ ] ^{1}/$_3$ *ma-na* 2 ^{1}/$_2$ GÍN
         ⌜*ší-im ku-sí-a-tim*⌝*[14]
  5   5 GÍN KÙ.BABBAR *ší-im*
         5 *ma-na* URUDU SIG$_5$
         10 *na-ru-uq*
         ar-ša-tum 1 GU$_4$
         ma-ar-ú-um
  10   *mì-ma a-nim*
         i-li-bi
         Ta-ar-ma-na

     8 mina and 21^3/$_4$ shekels of silver, of his *iṣurtum*; [ ] *^{1}/$_3$ mine, 2^1/$_2$ shekels, the price of *kusitu*-textiles*; 5 shekels of silver, the price of 5 mina good of copper; 10 sacks of wheat; 1 fat ox; all owed by Tarmana (Ulshöfer 1995: 155, no. 155).

In some instances, the bookkeeping term *ṭaḫḫuʾum* is used, e.g., in ICK 2.296, 7–8 (Balkan 1965: 157; Veenhof 1995: 322): '20 minas of copper, which have not been entered in the *iṣurtum*' (20 *ma-na <ša> a-na i-ṣú-ur-tim lá ṭa-ḫ[u]-ú-ni*).

---

[13] To the attestations of *iṣurtum* given by Veenhof (1995), add Struwe, ICK 1.111 (Ulshöfer 1995: 98–99, no. 80), MAH 19613 (ibid. 445, no. 588) and AKT 6a 104, 109, 110, 141, 231, kt 92/k 564b (see Sever 1997: 296) and kt m/k 144 (see Barjamovic 2011: 142, n. 467, who also suggests that the *iṣurtum* may have been documents drawn up in some early form of local script).

[14] Lines 3–4 have been erased.

Some texts indicate that the palace could issue *iṣurtum*-documents. The end of the memorandum VS 26.46 rev. 12–19, e.g., reads:

2. VS 26. 146 rev.

   mì-ma a-nim
   a-na ší-mì-im
   É.GAL-*lúm il₅-qé*
15   KÙ.BABBAR *i-na li-bi₄*
   É.GAL-*lim*
   i-ṣú-ur-tám
   ša TÚG^HI.A *ú-kà-al*
   ša AN.NA *lá ú-kà-al*

   all this the palace has bought, its (price in) silver is owed by the palace. I have an *iṣurtum* of the textiles, but I do not have one of the tin (Veenhof 1995: 324 no. 10).

The term *iṣurtum* in Old Assyrian texts from Anatolia thus occurs only in commercial contacts between the Assyrians and Anatolians and does not appear to be attested in purely Assyrian context.[15] Mostly, it concerns an official document made out to an Assyrian supplier or creditor by an Anatolian person or the palace, in which the latter acknowledges debt.

Another point that needs to be stressed is that *iṣurtum* refers to written documents that are clearly distinguished from cuneiform tablets. Most often, the *iṣurtum*-documents occur in the plural. This is apparent, e.g., in CTMMA I 84 (Veenhof 1995: 326, no. 15), in which *iṣurtum*-documents are evidently listed as a specific medium:

3. CTMMA I 84
58   *tup-pu-ú-a i-ṣú-ra-tù-ú-a*
   lu ta-aḫ-sí-sà-tù-ú-a ša URUDU *ma-dí-ma*
60   *mì-ma a-nim i-na* 2 *ta-ma-lá-ki-a*
   kà-an-ku-ma

   My tablets, my *iṣurtum*-documents and my memoranda concerning a lot of copper,[16] all this was placed under seals in my two containers.[17]

---

[15] Only in one case does it seem that an *iṣurtum* may have been written by an Assyrian trader, but here an Anatolian official is involved as well; see Veenhof (1995: 322–323).

[16] Or 'my documents, both my *iṣurtum*-documents as well as my memoranda'; see Veenhof (1995: 326), who feels that the use of *lu* in Old Assyrian enumerations points to two rather than three categories (Veenhof 1972: 18 n. 35). In this case, however, the repetition of the possessive enclitic pronoun 'my' seems to suggest that three separate categories are at issue.

[17] In lines 32–35 of this text, *tuppum* and *iṣurtum* documents are also clearly mentioned as two separate types of media.

The *iṣurtum*-documents seem to have functioned basically as debt notes and can occasionally be equated with a *tuppum ḫarmum* (*ša kunukkišu*), a sealed tablet of legal, evidentiary force. It can also, however, be clearly differentiated from this type of document. In ICK 1.13, e.g., a letter from Aššur-mālik to five persons, including two Anatolians, both the terms *iṣurtum* and *tuppum ḫarmum* are used:

4. ICK 1.13
     um-ma A-šùr-ma-lik-ma
5    $12^1/_2$ *ma-na* KÙ.BABBAR *ù* 1 *me-at na-ru-uq*
     ŠE-*am* : *Ḫa-pu-a-lá* : *re-i-um*
     ša ru-ba-tim ḫa-bu-lam
     tup-pu-šu : *ḫa-ar-ma-am*
     ša ku-nu-ki-šu : *u-kà-al*
10   *iš-tù* MU.4.ŠÈ : *ki-ma a-wa-at*
     Kà-ni-iš : *a-na ṣí-ib-tim*
     i-lá-ak-šu-um : *a-ba-ú-a*
lo.e. *be-lu-a* : *a-tù-nu* : *ma-lá*
     ta-le-e-a-ni KÙ.BABBAR
rev.   *ší-im-tám ù ú-ṭá-tám*
16   *ša-dí-na-šu-ma* : KÙ.BABBAR *ṣí-ib-tám*
     ù ú-ṭá-tám ṣí-ib-tám
     i-li-bi-šu : *id-a-ma*
     ša-tí-ša-ma : *li-ta-dí-in*
20   *a-ba-ú-a* : *be-lu-a* : *a-tù-nu*
     iḫ-da-ma : *ki-ma* : *lá-qá-a*
     KÙ.BABBAR *ší-im-tí-a* : *ù ú-ṭí-tim*
     ší-im-tí-a : *ep-ša-ma*
     ù a-na ṣí-ba-at KÙ.BABBAR
25   *ù ṣí-ba-at ú-ṭí-tim*
u.e.   *i-ṣú-ur-tù- šu* : *eṣ-ra*

(To Innāya, Ēnaḫ-Ilī, Aššur-taklāku, Galgallīya and Nazi), thus Aššur-mālik: Ḫappuala, the shepherd of the queen, owes me $12^1/_2$ minas of silver and 100 bags of barley. I have his valid tablet with his seal (*tuppum ḫarmum ša kunukkišu*). For 4 years it has been accumulating interest according to the word (rule) of Kaneš. You, my fathers, try as best as you can to make him pay the silver, the principal amount,[18] and the barley and charge him the interest on the silver and the interest on the barley, so that he will pay it annually. You, my fathers, my lords, pay attention! Take care to collect the silver, my principal amount, and the barley, my principal amount, and draw up his *iṣurtum* (*iṣurtušu eṣra*) for the interest on the silver and the barley (Veenhof 1995: 327, no. 16; also Michel 1991: 218–219, no. 159).

---

[18] For this translation of *šīmtum*, see CAD Š/III, 19, s.v. *šīmtu*.

The use of both terms within the same letter implies a distinction between the two. In his discussion of this text, Veenhof (1995: 327) wonders, 'Why a *tuppum ḫarmum* for the capital loan and an *iṣurtum* for the contract recording the accumulated interest?', a question to which he can find no satisfying answer.

   Thus far, excavations at Kültepe have produced no objects that have been identified as *iṣurtum*-documents, which can hardly be attributed to archaeological chance alone. In the end, Veenhof concludes that the difficulty in identifying *iṣurtum*-documents may suggest that an *iṣurtum* is the same as a *tuppum ḫarmum*, i.e., a clay tablet written in cuneiform functioning as a valid legal document. This does not, however, explain why the term was only used when dealing with Anatolians, why the different terms *tuppum ḫarmum* and *iṣurtum* are used within the same letter and why *iṣurtum* is not found in this meaning outside of Anatolia.

1.6. The Noun *iṣurtum* in Old Assyrian Context

Interestingly, the expression *iṣurtum eṣērum* occurs twice in the Old Assyrian corpus in strictly Assyrian context, where it is used in line with Old Babylonian usage. The first attestation concerns a letter by the ruler of Assur to the *kārum* (kt 79/k 101).

5. kt 79/k 101
Obv. 1   *um-ma wa-ak-lúm-ma*
          a-na kà!-ri-im
          *Kà-ni-iš*KI
          qí-bi-ma tup-pá-am
   5   *ša dì-in a-lim*KI
          ša a-šu-mì KÙ.GI
          *ša ni-iš-pu-ra-ku-nu-*tí-ni*
          tup-pu-um šu-ut a-ku-uš
          a-šu-mì KÙ.GI *i-ṣú-ur-*tám*
10   *ù-la né-ṣú-ur*
          a-wa-tum ša KÙ.GI
          pá-ni-a-tum-ma

> Thus (speaks) the chairman: Speak to the Kaneš-colony: The tablet of the verdict of the city regarding gold, which we sent to you, that tablet is invalid. Concerning the gold, we did not draw up/decide on a new rule. The rules for gold are the previous ones (Veenhof 1995: 328, no. 18).

As convincingly argued by Veenhof (1995: 329), the authorities in Assur had apparently passed a verdict regarding the sale of gold that was liable to misunderstanding, since it could be interpreted as a change of the hitherto valid regulation. Therefore, this letter was sent to inform the colonial authorities that the previous regulation was still valid. The meaning of *iṣurtum eṣērum* here must be that they had not (yet) drawn up or decided on a new rule. To this may be added a passage from AKT 6a, 231:

6. AKT 6a, 231, 9–15 (Larsen 2010: 376–377)
    um-ma a-na-ku-ma i-na u₄-mì-im
    ša a-bi-i ú-ṣa-ni ší-im-tù-šu
10   *i-na ma-aḫ-ri-ku-nu i-ší-ma*
    i-ṣú-ra-tim ú-ṣí-ir-ni-a-tí
    a-ba-ú-a bé-lu-a : a-tù-nu
    ma-lá a-bi-i i-ší-mu-ni-a-tí-ni
    me-eḫ-ra-at ší-ma-tim ša a-bi₄-a
15   *šu-ba-al-ki-ta-ni-ma*

(To Šu-Tammuzi, Elaya, Aššur-massuʾi, Kudātum, Adida, Lamassī and Ennam-Aššur, from Ennam-Aššur: When, sadly, my father died, I wrote to you together with Kudātum), saying: On the day my father left (Assur), he established his testament before you as witnesses, and he drew up his plans for us.[19] My dear fathers and lords, everything that my father decided for us, have me a copy made of my father's will.

In the above instances, the *iṣurtum* does not refer to a written document, but rather relates to 'fixing a rule' or 'taking a decision', which is in line with the usage of *iṣurtum* in Mesopotamia (cf. Veenhof 1995: 329).

1.7. Terms for 'to Draw', 'to Write in Hieroglyphs'?

It is thus seen that in strictly Assyrian context *iṣurtum eṣērum* is used in the same meaning as elsewhere in Mesopotamia, while referring to the writing of documents only in Anatolian context. Schwemer (2005/6: 223–224) has convincingly connected this particular usage of *iṣurtum eṣērum* in Anatolia to the Hittite/Luwian expression *gulzattar guls-*, 'to make a drawing, to write a document'. He suggests that under the influence of *gulzattar guls-*, the expression *iṣurtum eṣērum*, which already existed in Akkadian in the meaning 'to draw a drawing' or 'to fix a rule', gave rise to a different meaning in Anatolian context. This recalls the very similar usage of the Sumerogram GIŠ.ḪUR and the Akkadogram *UṢURTUM*, 'drawing', in the Hittite Period, representing Hittite/Luwian *gulzattar*, referring to 'documents'. The terms *iṣurtum* and GIŠ.ḪUR / *UṢURTUM* are thus used to refer to written documents in Anatolia in the Old Assyrian and Hittite Periods, respectively, whereas in Mesopotamia *iṣurtum* refers only to a 'drawing' or 'plan'. How is this to be explained?

Elsewhere, I have argued (Waal 2011) that the Hittite verb *guls-* (or preferably GUL-*s-*; Waal, forthcoming a), which is generally translated as 'to mark, to draw, to write', actually means 'to draw' and 'to write in hieroglyphs'. There are a number of important arguments leading to this conclusion, such as the consistent distribution of the verb *guls-* / GUL-*s-*, which in the meaning 'to write' is used only in connection with wood, stone and metal but *never* occurs in connection with a clay tablet (*tuppi*). And indeed, hieroglyphic inscriptions have been preserved precisely on stone and metal (wood has obviously not survived),

---

[19] Differently Larsen (2010: 377): 'and he drew up *iṣurtu*-documents for us'.

while clay tablets were reserved strictly for the cuneiform script.[20] An eloquent example is the fact that the verb *guls-* / GUL-*s-* is also used in KBo 12.38, which is generally accepted to be a blueprint for a hieroglyphic rock inscription (Güterbock 1967: 74, 81). Further, the Hittite distinction between a LÚDUB.SAR (scribe) and a LÚDUB.SAR.GIŠ (scribe on wood) implies an essential difference between these two professions.[21] Finally, the Hittite verb *guls-* / GUL-*s-* and Luwian *gulzā(i)-* / GUL-*zā(i)-* are in all likelihood to be connected to the Luwian verb for writing REL-*za-* (Waal forthcoming a).

I have therefore argued that in Hittite and Luwian the verb for 'writing in hieroglyphs' and 'drawing' is the same, which is hardly surprising considering the pictographic nature of the hieroglyphic script. A significant parallel is provided by ancient Egypt, where the verb used for 'writing' and 'drawing' (*sš*) is also the same. The ambiguous meaning of the verb GUL-*s-* / *guls-*, representing both 'to write' and 'to draw', may explain the aberrant use of the Sumerogram GIŠ.HUR, 'drawing', for 'writing' in the Hittite Period (Weeden 2011: 235; Waal 2011: 25).

If one accepts Schwemer's suggestion that the expression *iṣurtum eṣērum* in the meaning 'to write a document' was a loan translation of *gulzattar guls-*, a similar scenario may be assumed for the Old Assyrian Colony Period. The Assyrians translated the Hittite/Luwian expression *gulzattar guls-*, meaning 'to write' or 'to make a drawing', with their expression 'to make a drawing' (*iṣurtum eṣērum*) to refer to writing a document in pictographic hieroglyphs.

The *iṣurtum*-documents were thus texts written by Anatolians in hieroglyphs. They could have essentially the same function as a *tuppum ḫarmum*, i.e. the recording of a debt, but there was a crucial difference, as they were written in a different script.[22] In all likelihood, they were written down on wood, a material abundantly available in densely forested ancient Anatolia (Dörfler et al. 2011: 103 f.; Schachner 2011: 41, 160, Fig. 70). Due to the perishable nature of wood, none of these *iṣurtum*-documents have been preserved.

This proposed interpretation solves a number of awkward problems. It would account for why the *iṣurtum* is used only in trading with Anatolians, but not in strictly Assyrian context, and why a distinction between an *iṣurtum* and a *tuppum ḫarmum* was made. It would also explain why none of these *iṣurtum*-documents has so far been found. Furthermore, it would solve the mystery of why the number of contracts recording debts/credits in

---

[20] Only occasional hieroglyphic signs have been found on Hittite tablets, for which see Ünal (1989) and Waal (forthcoming b). Note further that metal could also be inscribed with cuneiform, in which case the verb *ḫazziya/e-* appears to have been used (Waal 2011: 24–25).

[21] A similar distinction is found in Neo and Late Babylonian texts, where a *sepīru*, a scribe writing in alphabetic script (mostly on leather or parchment), was designated by the Sumerogram LÚKUŠ.SAR (CAD S, 225 s.v. *sepīru*), and in the Persepolis Fortification tablets, in which scribes writing in alphabetic Aramaic are called 'scribes (writing) on leather' (ḪALtup-pi-ip KUŠMEŠ *uk-ku*) or 'Babylonian scribes (writing) on leather' (ḪALtup-pi-ip ḪALba-bi-li-ip KUŠMEŠ *uk-ku*); see Henkelman (2008: 93); Hunger (2009: 269); Waal (2011: 22). For a different view on the function and meaning of LÚDUB.SAR.GIŠ, see recently van den Hout (2010).

[22] It is quite possible that the term *iṣurtum* referred to hieroglyphic documents in general and that the nature and function of these documents could vary, just like in the case of *tuppum*. The fact that in kt c/k 459 14–15 a big *iṣurtum* (*iṣurtum rabītum*) is mentioned implies that in any case the size of *iṣurtum*-documents could vary.

copper granted by Assyrians to Anatolians found in Kültepe is so small and why hardly any documents from the palace have survived. Finally, it may also explain why the cuneiform script was not adopted by the Anatolians to write their own language and why it appears to have fallen out of use after the end of the Old Assyrian Period, a circumstance which has puzzled many scholars (see also § 3.5, below).

2. Hieroglyphs in the Old Assyrian Period

The discussion thus far would imply that at least some form of Anatolian hieroglyphic script was already in existence in the Old Assyrian Period. This goes against current opinions about the invention and origins of the Anatolian hieroglyphs, which are generally thought to date not before the 16th or even the 15th century BCE (e.g. Mora 1991; Yakubovich 2008; 2010: 285–299). The idea that the some form of rudimentary script already existed in the Old Assyrian Period is, however, not as audacious as it may seem, and there is even material evidence to support it.

2.1. Hieroglyphic Inscriptions from the Old Assyrian Period

Thus far, three (possibly four) inscriptions in Anatolian hieroglyphs from the Old Assyrian Period have been found at Kültepe.[23] A number of these symbols may be tentatively identified with later Anatolian hieroglyphs, bearing in mind that there is a considerable time gap.

1. The first inscription is incised on a vessel (Fig. 1).[24] The sign at the far right may represent *101 ASINUS$_{2A}$[25] or *99 EQUUS. The readings of the other signs are less evident.

2. The second inscription is also incised on a vessel and consists of 3, possibly 4, signs (Fig. 2).[26] The sign to the far right may represent the hieroglyphic sign *199 TONITRUS. This sign is also found on several early seals from the 18th/17th century as well as on another Old Assyrian vessel (see below, no. 4; Mora 1991: 10, 13). The sign to the left of it may tentatively be interpreted as the sign *140 SERPENS, which also occurs on early seals (Mora 1991: 5–19), but this is uncertain. The first sign cannot be identified with any later hieroglyphic sign.

3. The third inscription is painted on a vase (Fig. 3).[27] The left sign represents a five-pointed star, a sign that does not correspond to any later hieroglyphic sign. It looks somewhat similar to the enigmatic sign *187, a star with six rather than five points.

---

[23] Note that the inscriptions discussed here are clearly to be distinguished from the so-called pot marks, for which see most recently Glatz (2012).
[24] Hawkins (2011: 97).
[25] On this sign, see Hawkins *apud* Herbordt (2005: 295, 404, 433). The reading *100 ASINUS/*ta* seems less likely, since this sign normally has two ears rather than one.
[26] Hawkins (2011: 96).
[27] See Özgüç (1954: 379 f.). Note that Bossert (1959: 75 f.) attempts to read these three signs as *Ha-ti* UTU.

Fig. 1: Hieroglyphic inscription on an
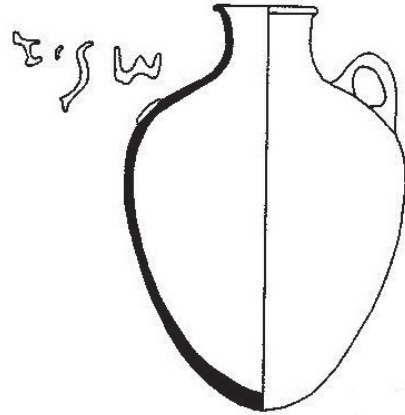Old Assyrian vessel (Hawkins 2011: 97)

Fig. 2: Hieroglyphic inscription on an
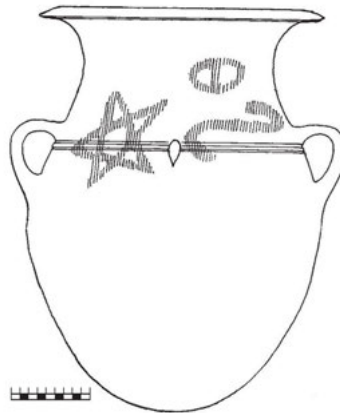Old Assyrian vessel (Hawkins 2011: 96)

Fig. 3: Old Assyrian vessel with painted hieroglyphs (Özgüç 1954: 379f.)

Further, there is a SERPENS-like sign (cf. no. 2, above), and the upper right sign could represent *215 *ha*.[28]

4[?]. A possible fourth example is a relief in the shape of the *199 TONITRUS sign on a vessel, but it is very probable that this merely served as some sort of grip facilitating the handling of the vessel (Börker-Klähn 1995: 41).

---

[28] The interpretation of this sign as *360 DEUS (Börker-Klähn 1995: 44) is less attractive, since this sign usually has the two internal verticals dividing the circle.

It is likely that the inscriptions on the vessels served to indicate the names of their owners (Hawkins 2011). This assumption is strengthened by the existence of several Old Assyrian debt notes explicitly mentioning that the amounts of grain or barley due are to be measured out in the vessel of the (Anatolian) creditor (see Balkan 1974: 39–40). The vessels thus needed to be distinctive and recognisable, which makes it plausible that they were marked with their owner's names.[29] There is also the comparable example from the Old Assyrian Period of a name (Amurrum-bāni) written on a vessel in cuneiform, which has also been interpreted as the owner's name (Özgüç 1995: 521).

2.2. Possible Hieroglyphic Signs on Seal Impressions from the Late Third/Early Second Millennium

Symbols that may be interpreted as hieroglyphic signs are present on some seal impressions dating from the end of the third millennium. One of the oldest attestations is a seal from Beycesultan (Fig. 4), which has been dated to the end of the third/beginning of the second millennium (Mora 1987, I: 332, 350, no. 3.3, with refs.).[30] This seal shows some symbols that have been identified as hieroglyphs.[31]

Fig. 4: Seal from Beycesultan, late 3rd / early 2nd mill. (Mora 1987, I: 332, 350, no. 3.3, III: tav. 109)

Another seal dated to the same period also shows some symbols that may very well be hieroglyphs (Mora 1987, I: 333, 350, no. 3.9, with refs.). These early seals are possibly to be read phonetically, but this cannot be established with certainty.

From the late 18th/early 17th centuries there are several seal impressions with hieroglyphic signs, such as the Tyskiewicz and Aydin seals (Boehmer / Güterbock 1987: 37 f.) as well as seal impressions from Karahöyük (Alp 1968: 271–287; Boehmer / Güterbock 1987:

---

[29] Alternatively, the inscriptions may have indicated the vessel's content or geographical origin.

[30] Note that Fabrizzio Giovannetti (pers. comm.) suggests that this date should be lowered and proposes to date the seal to the end of Middle Bronze Age (level VI) / beginning of Middle Bronze Age II (level V).

[31] Meriggi (1966: 60) discerns the sign *215 *ha* in the middle, and to the left possibly the sign *376 *zi/a*, but the different orientations of these two signs make this interpretation problematic.

36–37). Further, on several Old Assyrian seal impressions one finds a symbol closely resembling that accompanying the Sungod at Yazılıkaya.[32]

Hieroglyphic symbols on seals are well attested from the Old Hittite Period (ca. 1650–1500 BCE) onwards, some of which can be read phonetically with reasonable certainty.[33]

2.3. Random Signs or Part of a Writing System?

Considering the evidence discussed above, it is clear at least that some few figures and shapes used to form hieroglyphic signs as part of the hieroglyphic writing system of the Late Bronze Age are attested in earlier periods on Anatolian seals and vessels. However, it is difficult, if not impossible, to determine whether they constitute symbols only or whether they already had a logographic meaning and can be seen as forming part of a script or notation system. Scholars have tended to opt for the first possibility, mainly because the sign shapes do not always correspond to the later hieroglyphic signs from the Hittite Empire Period and because there is no unequivocal evidence for phonetic writing before the Middle or even Late Hittite Period (see above). These objections, however, are not insurmountable.

With respect to the fact that we have no clear evidence for phonetic writing, this applies to most writing systems in their earliest phase. Most are first used only for simple administrative records that have no need for grammar and/or phonetic endings. Both cuneiform and Egyptian hieroglyphs had a slow development, with a very gradual addition of representation of grammatical and syntactic categories.[34] In the words of Jerold Cooper (2004: 80–83):

> Although there seems to be a small amount of phonetic writing in proto-cuneiform, there is no certain expression of Sumerian grammatical affixes until the archaic tablets from Ur, c. 2800 BCE, that is, four centuries or so after the invention of proto-cuneiform. This absence of grammar did not impair the utility of proto-cuneiform, because its use was restricted to administrative accounts; even today, grammar has little or no role to play in ledgers. Syntax, too, was scarce or non-existent […]
>
> Only around 2700 do the first royal inscriptions begin to appear in Babylonia; literature appears a century or so later, and letters around 2400 BC. The same gradual increase in expression of grammar and syntax, and the concomitant increase in variety of written genres that more precise linguistic expression

---

[32] Börker-Klähn (1995: 42 with Fig. 5). In addition, there is an Old Assyrian seal impression from Alişar, which has been identified as pseudo-Luwian by Börker-Klähn (1995: 44), but this is probably to be dated to after the *kārum*-Period. Note that she rightly dismisses several other pieces of reputed evidence for hieroglyphic writing in the Old Assyrian Period. For further connections between representations on Cappadocian seals and hieroglyphs, see Mouton (2002).

[33] E.g. Güterbock / Boehmer (1987: 33–49), Mora (1991), Dinçol / Dinçol (2008: 19–21). A caveat here is that the dating of some of these seals is debated and they may have to be dated later.

[34] For an elaborate discussion, see Trigger (2004). For a different view, see Glassner (2003).

makes possible have been observed for Egyptian (Baines 2004) and Houston (2000) has described the increase of phoneticism and grammatical expression in Maya texts over several centuries.

The lack of written expression of grammatical affixes or phonetic values is thus quite common for pristine writing systems and does not exclude the use of script on a larger scale for administrative records. It should be noted, though, that semantic and phonetic indicators are by no means completely absent in the earliest Sumerian writings of the Uruk IV Period (Glassner 2003: 144–147). It is certainly not to be excluded that the same applied to the supposed wooden documents from the Old Assyrian Period. Though the seals from that period seem to show only pictographic symbols, this does not necessarily mean that at that time the script could not have been already more developed in written documents; seals are for the most part symbolic and one therefore does not necessarily find full grammatical sentences on seal impressions. Since the presumed wooden documents are not extant, nothing can be said about the presence or absence of written expressions of grammatical affixes or phonetic values on these records, and any discussion regarding to what extent one may refer to them as 'writing' is in this respect futile.[35] In any case, the lack of evidence for phonetic writing in the earliest attestations of Anatolian hieroglyphs on seals is not alarming and is no reason to exclude the existence of some form of notation system in the Old Assyrian Period.

The same applies to the fact that not all early hieroglyphic symbols correspond to signs in the later script. It is not uncommon for writing systems to initially have a considerable corpus of signs and variants, which is later narrowed down and standardized. With respect to proto-Elamite cuneiform Dahl (2002: 2) remarks that 'initially proto-writing featured a large body of signs and variants which later progressed into a system made up of a limited number of signs in a standardized repertoire.' Similarly, as Sumerian writing evolved the number of signs decreased (e.g. Glassner 2003: 164). In Egypt, the earliest forms of writing are attested on pottery, bones and ivory from the tomb U-j (ca. 3300–3200 BCE) and on pottery vessels and seal impressions from the graves of Naqada II (ca. 3400 BCE).[36] They were written in ink, carved, or made in relief. Of these signs, only a few correspond to later signs of the hieroglyphic Egyptian script. Though their exact status and function is unclear, they are generally considered to represent an early developmental stage of writing (Dreyer et al. 1998; Stauder 2010: 139). These early inscriptions are mostly very brief, only listing geographical names, kings, gods and other persons as well as products (wine, oil) or measurements/numbers, and remained so for several centuries. With a growing need to

---

[35] Note that some definitions of writing only encompass so-called glottographic writing systems, i.e. those connected to a particular language (e.g. Daniels 1996: 3), whereas others also include semiasographic writing, which is language independent (e.g. Trigger 2004: esp. 43, with refs.; Sampson 1985: 29–30; Woods 2010: 18; Haring 2009). As suggested by Trigger (2004: 44) it might be useful to refer to semiasography as 'recording' and to reserve the term 'writing' for systems that represent a particular language.

[36] See Dreyer et al. (1998); Kahl (2003). For a general discussion of the earliest writing of Egypt, see Baines (2004).

write more names, place names etc., a need for a more uniform and universal system became apparent, a development that can be traced for at least 300 years in Egypt.

Bearing these observations in mind, it seems useful to have a fresh look at the origin and development of the Anatolian hieroglyphs.

3. The Origins and Development of Anatolian Hieroglyphs

The inscriptions on vessels in the Old Assyrian Period suggest that the Anatolian hieroglyphic symbols were used to render personal names. The seal impressions further strengthen the idea that these symbols could be used to convey messages. Above it was pointed out that no full-fledged writing system is necessary for simple book-keeping. It is thus only a small and logical step to suggest that the Anatolian (proto-)hieroglyphs can be seen as part of a writing or notation system and that their use extended to simple economic and administrative records in the Old Assyrian Period. Further, it is not to be excluded that this recording or notation system was at that time already more developed than can be derived from the brief inscriptions and seal impressions. Indeed there are additional arguments that make such a scenario attractive.

3.1. The Nature of the Anatolian Hieroglyphic Script

There are some significant differences between Anatolian hieroglyphic and cuneiform script. In some respects, the Anatolian hieroglyphs are less developed, and it has puzzled scholars why the Hittites would have introduced a deficient script when cuneiform was already known to them (e.g. Klinger 2007: 30). Cuneiform has V, CV, VC and CVC signs, whereas the hieroglyphic script knows only V and CV (and a very few CVCV) signs. The Anatolian hieroglyphs are written in boustrophedon with a loose, sometimes chaotic ordering of the signs. The cuneiform signs, on the other hand, are written from left to right, line by line. Further, in Anatolian hieroglyphic, the determinatives may be written before or after the noun, whereas in cuneiform they are nearly always placed before the noun. These dissimilarities point to an autonomous origin of the Anatolian hieroglyphs, and make it unlikely that it was inspired by cuneiform, except, perhaps, indirectly (see also Daniels 1996: 24–25 and § 3.3, below). On the contrary, there is evidence that might speak for the influence of the hieroglyphic on Hittite cuneiform: The development of GEŠTIN to the syllabic value wi_5 in cuneiform may be compared with the syllabic value $wí$ for the hieroglyphic sign VITIS. Since acrography is an established principle of hieroglyphic writing but not of Hittite cuneiform, it seems likely that cuneiform followed hieroglyphic here (Weeden 2011: 375).

It is also to be noted that cursive hieroglyphic sign forms are found on seal impressions from the Empire Period. This may be seen as an indication that the script must have been regularly written from an early period onwards (and possibly that it was written *on* rather than incised *in* the writing surface). If the signs had been used only for seal impressions and

monumental stone inscriptions, one would not really expect the existence of cursive forms.[37]

3.2. Continuity of Anatolian Hieroglyphs

Though not all of the earlier hieroglyphic symbols and figures correspond to later hiero-glyphs, there is ample evidence for continuity in the Anatolian hieroglyphic signs, at least from the 17th century onwards. Mora (1991) has suggested a division of the signs found on 77 seal impressions from the 17th/16th centuries into two groups: signs that occur in isolation and, if together with other signs, then only the oft-attested signs BONUS$_2$, VITA or SCRIBA (group 1); and those occurring in combination with other signs (group 2).

Within the first group, Mora found that 8 (or possibly 12) out of 26 attested signs are continued by signs attested in the Empire Period, which comes down to a correspondence of 30–46 %. Of the 52 signs in the second group, 20 are attested with phonetic values in the Empire Period, while 4–5 have an exclusively ideographic value in that period, which yields a correspondence of 46–48 %.

Though the interpretation of most of the seal inscriptions is uncertain, a substantial amount of the signs attested on these older seals continue to be used in the Empire Period. Moreover, if read phonetically, at least five of the names occurring on these early seals correspond to names attested in (later) cuneiform texts (Mora 1991: 18).

Mora describes the above congruencies as a modest result. One could, however, argue that the above-mentioned percentages of agreement are quite significant, especially if one bears in mind the developments of other pristine scripts (see § 2.3, above) and the rela-tively low number of available seal inscriptions, which might have a statistically distorting effect.

To the above numbers, one should add the oft-attested signs BONUS$_2$, VITA and SCRIBA, which continue to be used from the 18th century onwards, but were left out of consideration by Mora. Further, it is of interest that most of the signs occurring in the Old Assyrian vessel inscriptions discussed above (i.e. *199 TONITRUS, *100 ASINUS / *ta*, *140 SERPENS) also occur on these early seal impressions, whereby it should be noted that the dating of some of these seal impressions is under discussion. Still, while their exact dating may be uncertain, there is considerable evidence for continuity and congruence of Anatolian hieroglyphs.

3.3. Contemporary Development of Other Pictographic Scripts in the Aegean

An earlier date for the development of Anatolian hieroglyphs would concur with the first attestations of the Aegean scripts, to which Anatolian script bears some formal similarities (Hawkins 1986: 374). Cretan hieroglyphs appear to have spanned the Middle Minoan Period, ca. 2000–1600 BCE (Woodard 1997a: 5; 1997b: 4). Linear A, which is likely to have evolved out of the (equally undeciphered) Cretan hieroglyphic is attested from about

---

[37] Güterbock (1939: 36); Payne (2008: 119); Waal (2011: 28). An in-depth study of the palaeography and development of the Anatolian hieroglyphs might provide more insight into this matter.

1750–1450, and its inception is perhaps to be dated to about 1850 BCE (ibid.).[38] Although, as rightly pointed out by Yakubovich (2008: 16–17), one should beware of attributing too much value to the similarities between these scripts, it is significant that there was an emergence of pictographic scripts around the same time in the same area. As Hawkins (1986: 374) has suggested, 'the pictographic character of both the Aegean group and the hieroglyphic Luwian, their original use on stamp seals, and their typological similarity in comprising only logograms and CV signs indicate some sort of influence, probably from the Aegean to Anatolia' (see also Daniels 1996: 24–25). Recently, Barjamovic (2008; 2011: 357–378) has made a strong case that the documented Old Assyrian trade in Anatolia was but a small part of a much larger interregional system of exchange, with Purušhaddum functioning as a gateway between the Anatolian central plateau and regions more to the west, to the Aegean and the Balkans. This would imply that there were extensive regular contacts between Anatolia and the Aegean at least from the beginning of the second millennium BCE onwards, which would tie in well with a concurrence in the development of scripts in these regions.

If one accepts an earlier date for the Anatolian hieroglyphs, then the genesis of the script would not have occurred in isolation, but simultaneously with the developments of other, comparable, early scripts.

3.4. 'Natural Development' vs. 'Invention'

The above scenario implies that Anatolian hieroglyphs developed step-by-step, originating out of economic / administrative needs; indeed, just like virtually all independent writing systems in the world. This scenario is in a number of ways preferable to that advocated by Yakubovich, who suggests that Anatolian hieroglyphs were 'invented' much later, around 1400 BCE. One of the difficulties with his scenario is the issue of why a new script would suddenly be introduced at a time when the cuneiform script had already been in use for over 200 years. Yakubovich believes that opting for a new script was dictated by nationalistic concerns:

> […] the Anatolian hieroglyphic script was developed in Hattusa, in the mixed Hittite and Luvian environment, for writing Anatolian names and titles on durable objects, such as seals. This happened at the time when the cuneiform script of Mesopotamian origin had been already in use in the Hittite capital for more than two hundred years. But what prompted the Hittite rulers and high officials to introduce the new script in addition to the cuneiform for rendering their official signatures? I believe that this decision was primarily dictated by nationalistic concerns. The Hittite royal seals of the Old Kingdom Period, the so-called '*tabarna*-seals', were inscribed in Akkadian. Even in the later period, the cunei-form periphery of the royal seals could in principle be read in Akkadian as well as in Hittite and Luvian, and there was no easy way to resolve this ambiguity within the cuneiform script, as long as the inscription consisted entirely of per-

---

[38] Note that Bennett (1996: 132) dates the Cretan hieroglyphic scripts from ca. 1750–1600 BCE and Linear A to ca. 1800–1450 BCE.

sonal names and Sumerographic expressions. One could, of course, phonetically render the common nouns making part of the royal title, such as "son" and "king", but this would make the legends much longer and, in addition, would run afoul of the common practice of writing these words as Sumerograms in Hittite texts. The radical alternative was the invention of an entirely new writing system, which was not in use in Mesopotamia. The choice of this solution could be triggered by the pre-existence of auspicious symbols decorating the central part of Old Kingdom seals (Yakubovich 2008: 28–29).

This line of reasoning is problematic. For one, the idea of inventing a completely new writing system in order to resolve the ambiguity of the cuneiform script on the periphery of seals seems somewhat radical and far-fetched to say the least, all the more so since it is only royal seals on which cuneiform is attested.[39]

Further, this assertion is contradicted by the fact that the Hittite kings continued the practice of cuneiform writing in the outer ring of their seals up to and including the last known king Suppiluliuma II (Herbordt et al. 2011). It may additionally be noted that the Hittite seals were already quite distinct from the Mesopotamian (and Mittanian) ones, not only because of the presence of hieroglyphic symbols but also because they were stamp seals rather than cylinder seals. The need for nationalistic self-expression on seals is thus not self-evident and there is no concrete evidence to support it.

Perhaps most importantly it is very unlikely that such a new artificially constituted writing system created for the seals of kings and officials would become the most popular script for everyday documents in a relatively short period of time. That the Anatolian hieroglyphs survived the fall of the Hittite Empire and were used for letters and economic documents in the Iron Age implies that this script was already widely used and firmly rooted in Hittite society during the existence of the Hittite Empire. It is doubtful whether an artificially created script could have become a widespread and common writing medium so rapidly, especially when there would already have been another script available, namely the cuneiform.[40] Indeed, the Bisitun inscription of Darius mentioned by Yakubovich as a parallel may be telling: this newly invented script died out directly after the fall of the Persian Empire.

Yakubovich (2010: 295) argues that the hieroglyphic script developed in a mixed Hittite and Luwian speaking environment and that it was originally not restricted to the Luwian language. For this environment, he suggests the socio-linguistic setting of Ḫattuša in around 1400 BCE. However, Ḫattuša around 1400 BCE was certainly not the only mixed language environment where this might have happened. In the Old Assyrian texts from Kültepe, for example, we find Luwian and Hittite (as well as other) names of the native population, so this city would have offered an equally diverse environment in which the script could have developed.

---

[39] The fact that cuneiform was only used on royal seals may be seen as an indication that this was the script that was associated with the royal palace; see also § 5, below.

[40] In addition, the creation of a complete writing system in pre-modern societies should not be underestimated; see Bagley (2004: 233) on this matter with respect to the invention of the Chinese script.

Rather than assuming a completely new 'invented' writing system triggered by the existence of symbols decorating Old Kingdom seals, it is preferable to assume that Anatolian hieroglyphs gradually developed and that these early symbols reflect an initial stage of the same writing system. It is very possible and even likely that some form of standardization of the script took place at a certain point, probably around 1400 BCE, but this should not be seen as a new invention and does not imply that the script cannot have been used to record economic and administrative documents before that time.

3.5. The Disappearance of the Cuneiform Script from Anatolia

After the Old Assyrian Period it seems the cuneiform script was no longer used in Asia Minor. The fact that the Anatolian population, which had been exposed to this script for some 200 years, did not adopt it to record their own language has perplexed many scholars, all the more so because it is clear, e.g., from the existence of a range of official titles (Veenhof / Eidem 2008: 219) and several types of service obligations (Dercksen 2004), that Anatolian society had a complex and highly structured administration (Michel 2011: 112). Though it is of course possible that the administration was done in a different manner (see also above § 1.2) and that the Anatolians felt no need for or simply lost interest in writing (van den Hout 2011: 901), this is altogether not a very satisfactory solution, especially in light of the references to *iṣurtum*-documents noted above.

Following its second introduction the cuneiform script disappears again after the fall of the Hittite Empire around 1180 BCE, after having been in use for some 400–500 years. The Anatolian hieroglyphs, on the other hand, continued to be used well into the first millennium. Both these mysterious disappearing acts of the cuneiform script can be explained if one accepts that the Anatolians already had a script of their own, which they continued to use after the introduction(s) and disappearance(s) of the cuneiform script. Cuneiform never fully penetrated Anatolian society; first, it was predominantly the script of the 'outsiders' (the Assyrians and other foreign merchants), and later the use of the script was limited to certain domains, such as religious, juridical and historical texts found in the tablet collections of the capital. It was, however, not used for the daily administration of the palace or for private records (see § 5, below).

4. Arguments against the Use of Anatolian Hieroglyphic Script in the Old Assyrian Period

4.1. Absence of Evidence

The great difficulty looming over this entire discussion is, obviously, that no wooden *iṣurtum*-documents, i.e. the medium that supposedly bore hieroglyphs, are extant. This is true for both the Hittite and the Old Assyrian Periods. While it is hazardous to construct a positive argument from silence, the opposite, i.e., assuming that hieroglyphs were not written on *iṣurtum*-documents because such are not extant, is equally conjectural. One must be wary of basing reconstructions and conclusions exclusively on the available material, for it

may be selective and yield a lopsided perspective. Considering the abundance of wood in Anatolia in the second millennium BCE, it would be a logical choice for a primary writing material. The evidence for the use of Anatolian hieroglyphs in the Old Assyrian Period may indeed seem meagre, but then again, since they were presumably written down on perishable material (and certainly not on clay tablets), what evidence can one expect to find? If one were to imagine for a moment that for some reason no cuneiform tablets had been found in Anatolia, what evidence for cuneiform writing would be available except for some inscriptions on seals and the occasional vessel or spearhead? Absence of evidence should not be seen as evidence of absence.

Further, it is significant that both in the Old Assyrian and the Hittite Periods there is a conspicuous absence of certain types of documents. As noted above, in the Old Assyrian Period there are hardly any debt notes or other documents coming from the palaces, whereas it is known that the palace was actively involved in trade and routinely bought goods on credit (Dercksen 1995: 166–168).[41] Given the hierarchic organization of the Anatolian city-states (see § 3.5), one would also expect other, internal administrative documents. In addition, only a very small number of contracts recording debt/credit notes in copper have turned up, though the copper trade was vast (Barjamovic 2011: 273–275). The absence of these categories of documents cannot be explained by archaeological chance alone. Also, their absence finds a striking parallel in the Hittite Period, from which virtually no day-to-day administrative documentation from the palace or private contexts is extant.[42]

4.2. Sealing Practices

An argument raised by Veenhof (1995) against the existence of wooden documents in the Old Assyrian Period is the fact that no large archives of clay bullae have been found at Kültepe.[43] He argues that if the *iṣurtum*-documents had indeed been wooden writing boards, which would have disintegrated, one would still expect to have found sealed clay bullae that had once been attached to them, like in Ḫattuša, where large numbers of clay

---

[41] Veenhof (1995: 327) suggests that the absence may be due to the palace having acted through officials, but there is also evidence that the palace acted as a partner in transactions, probably through an unnamed individual (see e.g. example no. 2 in § 1.5, above). Further, the number of debt notes involving palace officials is too low to represent all the trade activities of the palace.

[42] See Waal (2011) and § 5, below. The only example of a Hittite private document is the fragment Bo 2006/09 found at Sarıkale (Wilhelm 2007). This heavily damaged tablet, which may date to the Middle Hittite Period, seems to be a *Rechtsurkunde* in which a high official is involved. The tablet is sealed by cylinder seals, probably of the witnesses, who are mentioned on the reverse. This sealing practice is not attested on any other Hittite tablets. In addition, the tablet shows traces of strings in its core, to which in all likelihood sealed bullae were attached, similar to the land deeds. The precise function of this unique tablet is hard to ascertain. Considering the fact that a high official is mentioned it may well be an official document of the palace.

[43] The clay bullae, 419 in number, found thus far at Kültepe seem to have been linked with the storage and shipment of various goods (Veenhof / Eidem 2008: 55; Özgüç / Tunca 2001) as well as for the internal ordering of the archives (cf. Larsen 2010). Note that Özgüç / Tunca attribute the relatively low number of bullae compared with other sites to the destruction of the palace.

bullae from the Hittite Period have been unearthed. These bullae from the Hittite capital are thought by some to have been attached originally to wooden writing boards. It is, however, far from certain that this was indeed the case: it is just as (or even more) likely that they were attached to other (perishable) goods (Mora 2007).

Moreover, the expectation of finding clay bullae at Kültepe as the remaining traces of *işurtum*-documents is based entirely on the assumption that they would have looked like and would have been sealed in the same manner as the later wooden writing boards known from the Ulu Burun shipwreck, likely of Mycenaean origin (e.g. Shear 1998; Pulak 2005; Bachhuber 2006), or the ivory writing boards from Nippur of the first millennium BCE, i.e., a diptych, the inner surface of which was covered with wax and which could be closed and wrapped with strings, to which sealed clay bullae were attached. It is entirely conceivable, however, that the Anatolian wooden documents looked quite different. Considering the round forms of the script's signs it is quite feasible that they were written in ink, directly on the wood rather than carved into a (waxed) surface (Hawkins 1986: 374; Waal 2011: 28). An additional argument for a different appearance is the fact that the Assyrians used a different terminology when referring to writing boards covered with wax (*tuppum ša iškurim*).[44] These waxed tablets were presumably the type of diptychs known from the first millennium and the Ulu Burun shipwreck. The fact that the Assyrians had a distinct term for wooden writing boards covered with wax would suggest that the term *işurtum* refers to another type of document. There are various ways of sealing a document, and a different technique altogether may have been used.[45] Since the wooden documents have not survived, one can only speculate regarding their appearance and how they may have been sealed.

4.3. The Use of Cuneiform Writing by Anatolians

The fact that there are documents written in Old Assyrian by Anatolians has also been raised as an argument against the existence of an Anatolian script. As seen above, these concern documents produced by commercially active Anatolians who traded with Assyrians as well as a very limited number of documents from the palace. Indeed, it is only to be expected that some Anatolians learned the Assyrian script, just as some Assyrians presumably would have been able to draw up an *işurtum*. It is clear from mixed marriages and the presence of Anatolians in the Assyrian records in the lower town of Kültepe that there was a lot of interaction between the Assyrian merchants and the local elite. Especially children with an Anatolian mother and an Assyrian father are likely to have been

---

[44] See Veenhof (2010: 100 with references).

[45] Cf. e.g. the newly found Aramaic documents from 4th-century Achaemenid Bactria, consisting of debt notes written on wooden sticks (tallies) with incisions on the edges representing the amount of the relevant commodity (Shaked 2004: 18–20). Once the edges were incised, the wood was split lengthwise, and two identical texts could be written on the two inner surfaces. This created two copies of the same document with matching incisions that could serve the purposes of identification and verification. A similar practice was quite common in Central Asia and certain parts of Central and Eastern Europe up to the 20th century. It is not argued here that the Anatolians used this system as well, but that its existence shows that there are alternatives to sealing in administrative systems. I am indebted to Wouter Henkelman for this reference.

bilingual and able to make (simple) debt notes and contracts in both scripts and languages. The few palace documents also show that cuneiform was used for some types of documents, such as correspondence with other city-states. However, it seems the cuneiform script was restricted to certain genres, and in all likelihood co-existed with another script.

5. The Second Introduction of Cuneiform

At some point in the 17th century, probably under Ḫattušili I, the cuneiform tradition was introduced into the Hittite Empire. This was in all likelihood directly connected to Ḫattušili's Syrian campaigns and his international ambitions. Initially, this script appears to have been used only for the Akkadian language (Popko 2007; van den Hout 2009). The use of Akkadian was indispensable for communicating with local Syrian rulers during his campaigns and for all subsequent diplomatic contacts. Alongside international ambitions, status and prestige may also have been factors in the choice to use Akkadian for internal documents of the royal administration, such as annals and land deeds.

A further and later step was the development of a Hittite cuneiform tradition (Popko 2007; van den Hout 2009). The cuneiform script and Hittite language were apparently exclusively reserved for certain domains of texts such as religious and historical texts and not used for private or daily administrative texts. Hittite appears to have been the language of power and one of the tools to maintain the Empire's continuation and unity.

The language most spoken in Anatolia, however, was Luwian. It is clear that there was a substantial Luwian undercurrent in the Hittite Empire, which influenced the Hittite language (e.g. Melchert 2005; Rieken 2006; van den Hout 2006; Yakubovich 2010). It is more than likely that this undercurrent also had its own scribal tradition: Anatolian hieroglyphs. Though originally Anatolian hieroglyphs may not have been reserved for the Luwian language alone (Yakubovich 2010: 285–299), the script certainly became associated with this language in later times. The Luwian speaking population used and continued to use this domestic script for day-to-day administration and private documents, presumably written down on wood in ink. As I have argued elsewhere (Waal 2011, with refs.),[46] there are a number of indications that hieroglyphic script was in fact quite widespread within the Hittite Empire. The concept of two different scripts used simultaneously within one empire is of course not without precedent, as shown, e.g., by the Achaemenid Empire, where both (cuneiform) Elamite and (alphabetic) Aramaic were used.

The evidence of the letters and economic texts (on lead strips) from the post-Empire Period shows that by this time at the very latest the hieroglyphic script was certainly used for writing everyday administrative documents. In contrast, the only evidence for hieroglyphic writing extant from the Hittite Period are seal impressions and inscriptions in stone or metal, all other documentation having been irretrievably lost. The assumption that Anatolian hieroglyphs were the most commonly used script concurs with the fact that the Hittite kings chose hieroglyphs instead of the cuneiform script for their royal inscriptions.

---

[46] To the examples given there, one may add the hieroglyphic inscriptions from Ḫattuša on two stelae exhibited in the archaeological museum of Istanbul (inv. nos. 7775 and 7776), dated to the 14th century BCE.

It seems safe to assume that the king wanted to reach the largest possible public with these (propagandistic) expressions, and the Anatolian hieroglyphs that were used for private and daily economic records would have had a much larger potential literate audience than the cuneiform script, which was restricted to certain (palatial) domains and only used by a limited group of people. The assumption that the usage of Anatolian hieroglyphs was more frequent and more widely spread than the cuneiform script also ties in well with the fact that it is the hieroglyphic script that survives, whereas the cuneiform disappears directly after the fall of the Empire.[47]

6. Conclusions

As has been argued in the preceding paragraphs, it seems likely that Anatolian hieroglyphs originated already during the end of the third or the beginning of the second millennium BCE. In the course of several centuries these hieroglyphs developed from a rudimentary, (mainly) symbolic script or notation system to a fully developed writing system in the Hittite Empire Period. Like almost any other script or writing system, it started out as a simple pictographic script used to record economic transactions.

In the Old Assyrian Period, the Anatolians thus already had a (proto-)script that made the recording of simple economic (and perhaps later more complex) transactions possible, comparable to the first centuries of cuneiform writing. The elusive *iṣurtum*-documents, used only in connection with Anatolians, must refer to these wooden documents on which hieroglyphs were written. Since wood is a perishable material, these wooden documents have not survived. Several arguments, however, support their existence as well as the further claims detailed above:

– Both in the Old Assyrian and the Hittite Periods the terminology used for writing and documents suggests two distinct writing systems. The use of *uṣurtum* / *iṣurtum* and GIŠ.HUR in Anatolia, which deviates from that in Mesopotamia, can only be satisfactorily explained by assuming that they refer to hieroglyphic documents (§§ 1.3–1.7);
– Both in the Old Assyrian and the Hittite Periods there is a conspicuous absence of certain types of documents, which cannot be explained by archaeological chance (§ 1.2);
– Wood was abundantly available in thickly forested Anatolia and therefore a logical primary writing material (§ 1.7);
– Seal impressions and short inscriptions confirm that Anatolian hieroglyphs were used to convey messages already from the end of the third/beginning of the second millennium onwards. Though this evidence may seem meagre, considering the perishable nature of the primary medium of this script (wood), no more evidence is to be expected (§§ 2.1–2.2);
– The cursive sign forms on some seal impressions suggest that the script was frequently used for writing (§ 3.1);
– The nature and characteristics of the Anatolian hieroglyphic writing system point to an origin independent of the cuneiform script (§ 3.1);

[47] For a more elaborate discussion, see Waal (2011).

– There are indications that in Anatolia the hieroglyphic influenced the cuneiform, which favours the assumption that the former predates the latter in Anatolia (§ 3.1);
– There is a significant degree of continuity in the sign forms of hieroglyphs on earlier seals and the later signs of the Empire Period (§ 3.2);
– An early date of the Anatolian hieroglyphs would mean that they did not develop in isolation, but in conjunction with other, formally similar, writing systems in the Aegean and Eastern Mediterranean (§ 3.3);
– An explanation based on gradual development, as in the cases of most other scripts, is preferable to assuming a 'sudden invention' of the Anatolian hieroglyphic script. Writing systems are usually not created overnight, and if they are invented they are unlikely to become the everyday script in a short period of time or to survive their original context (§ 3.4);
– The cuneiform script was never adopted by the Anatolians, but disappeared with the abandonment of the Assyrian trade network and again after the collapse of the Hittite Empire, whereas Anatolian hieroglyphs continued to exist (§ 3.5).

The impact of the introduction of cuneiform in Anatolia was thus less significant, at least in the long term, than it may appear at first glance. The Anatolians in all likelihood already had a notation system of their own, which continued to develop and to be used parallel to cuneiform. Cuneiform script as a consequence never fully penetrated Anatolian society, but always remained the script of the outsiders (the Assyrians), and during the Hittite Empire its usage was restricted to certain genres only, which may go some way in ex-plaining why the cuneiform tradition disappeared whereas the Anatolian hieroglyphs survived.

Due to the lack of a primary portion of the critical evidence, this scenario unavoidably must remain tentative, but it would seem to offer a more satisfactory explanation of the particular constellation of evidence at hand than alternative hypotheses. Applying Occam's razor, the assumption of an earlier date for the existence of (a primitive form of) Anatolian hieroglyphs solves a number of problems and accounts for several awkward facts that are otherwise left unexplained. Or, in Sherlock's words, 'Each fact is suggestive in itself. Together they have a cumulative force.'

Bibliography

Alp, S. (1968): Zylinder- und Stempelsiegel aus Karahöyük bei Konya, Ankara.
Bachhuber, C. (2006): Aegean Interest on the Uluburun ship, AJA 110, 345–363.
Bagley, R. W. (2004): Anyang Writing and the Origin of the Chinese Writing System. In: S. D. Houston (ed.), The First Writing. Script Invention as History and Process, Cambridge, 190–249.
Baines, J. (2004): The Earliest Egyptian Writing. Development, Context, Purpose. In: S. D. Houston (ed.), The First Writing. Script Invention as History and Process, Cambridge, 150–189.
Balkan, K. (1965): Review of L. Matouš, ICK 2, OLZ 60, 146–162.
Balkan, K. (1974): Cancellation of Debts in Cappadocian Tablets. In: K. Bittel et al. (eds.), Anatolian Studies Presented to Hans Gustav Güterbock on the Occasion of his 65th Birthday, Istanbul, 29–41.
Barjamovic, G. (2008): The Geography of Trade. Assyrian Colonies in Anatolia c. 1975–1725 BC and the Study of Early Interregional Networks of Exchange. In: J. G. Dercksen (ed.), Anatolia and the Jazira during the Old Assyrian Period (PIHANS 111), Leiden.

Barjamovic, G. (2011): A Historical Geography of Anatolia in the Old Assyrian Colony Period, Copen-
    hagen.
Barjamovic, G. / M. T. Larsen (2008): An Old Assyrian Incantation against the Evil Eye, AoF 35, 144–155.
Barjamovic, G. / T. Hertel / M. T. Larsen (2012): Ups and Downs at Kanesh. Chronology, History and
    Society in the Old Assyrian Period (PIHANS 120), Leiden.
Bennett, E. L. (1996): Aegean Scripts. In: P. T. Daniels / W. Bright (eds.), The World's Writing Systems,
    Oxford, 125–133.
Boehmer, R. M. / H. G. Güterbock (1987): Glyptik aus dem Stadtgebiet von Boğazköy. Grabungs-
    kampagnen 1931–1939, 1952–1978 (BoHa 14), Berlin.
Börker-Klähn, J. (1995): Archäologische Anmerkungen zum Alter des Bild-Luwischen. In: O. Carruba
    et al. (eds.), Atti del II Congresso Internazionale di Hittitologia. Pavia 28 giugno – 2 luglio 1993
    (StMed 9), Pavia, 39–54.
Bossert, H. (1952): GIŠ.HUR, BiOr 9, 172–173.
Bossert, H. (1959): Bild-Luwisches. In: K. Kienle et al. (eds.), Festschrift Johannes Friedrich zum 65. Ge-
    burtstag am 27. August 1958 gewidmet, Heidelberg, 61–90.
Cooper, J. C. (2004): Babylonian Beginnings. The Origin of the Cuneiform Writing System in Com-
    parative Perspective. In: S. D. Houston (ed.), The First Writing. Script Invention as History and Process,
    Cambridge, 39–68.
Dahl, J. L. (2002): Proto-Elamite Sign Frequencies, CDLB 2002.1, 1–3.
Daniels, P. T. (1996): The First Civilizations. In: P. T. Daniels / W. Bright (eds.), The World's Writing
    Systems, Oxford, 21–32.
Dercksen, J. G. (1995): The Old Assyrian Copper Trade in Anatolia (PIHANS 75), Leiden.
Dercksen, J. G. (2004): Some Elements of Anatolian Society in Kaniš. In: J. G. Dercksen (ed.), Assyria and
    Beyond. Studies Presented to Mogens Trolle Larsen (PIHANS 100), Istanbul – Leiden, 137–177.
Dercksen, J. G. (2007): On Anatolian Loanwords in Akkadian Texts from Kültepe, ZA 97, 26–46.
Dinçol, A. M. / B. Dinçol (2008): Die Prinzen- und Beamtensiegel aus der Oberstadt von Boğazköy-
    Ḫattuša vom 16. Jahrhundert bis zum Ende der Großreichszeit (BoHa 22), Mainz.
Donbaz, V. (1998): Inscribed Spear Heads and Some Tablets at the Gaziantep Archeological Museum,
    AoF 25, 173–185.
Dörfler, W. et al. (2011): Environment and Economy in Hittite Anatolia. In: H. Genz / D. P. Mielke (eds.),
    Insights into Hittite History and Archaeology, Leuven, 99–124.
Dreyer, G. / U. Hartung / F. Pumpenmeier (1998): Das prädynastische Königsgrab U-j und seine frühen
    Schriftzeugnisse, Mainz.
Frangipani, M. (2007): Arslantepe. Cretulae. An Early Centralised Administrative System before
    Writing, Roma.
Glassner, J. J. (2003): The Invention of Cuneiform. Writing in Sumer, Baltimore – London.
Glatz, C. (2012): Bearing the Marks of Control? Reassessing Pot Marks in Late Bronze Anatolia, AJA
    116, 5–38.
Güterbock, H. G. (1939): Das Siegeln bei den Hethitern. In: J. Friedrich et al. (eds.), Symbolae ad jura
    Orientis antiqui pertinentes Paulo Koschaker dedicatae (Studia et documenta 2), Leiden, 26–36.
Güterbock, H. G. (1956): Review of M. Riemschneider, Die Welt der Hethiter, Stuttgart, OLZ 51,
    513–522.
Güterbock, H. G. (1967): The Hittite Conquest of Cyprus Reconsidered, JNES 26, 73–81.
Haring, B. J. J. (2009): Introduction. In: B. J. J. Haring / O. E. Kaper (eds.), Pictograms or Pseudo Script?
    Non-textual Identity Marks in Practical Use in Ancient Egypt and Elsewhere, Leuven 2009, 1–4.
Hawkins, J. D. (1986): Writing in Anatolia. Imported and Indigenous Systems, World Archaeology 17,
    363–376.
Hawkins, J. D. (2000): The Iron Age Inscriptions. Parts 1–3 (CHLI I), Berlin – New York.
Hawkins, J. D. (2011): Early Recognisable Hieroglyphic Signs(?) in Anatolia. In: F. Kulakoğlu / S. Kangal
    (eds.), Anatolia's Prologue. Kültepe Kaneš Karum. Assyrians in Istanbul, Istanbul, 96–97.
Henkelman, W. F. M. (2008): The Other Gods Who Are. Studies in Elamite-Iranian Acculturation Based
    on the Persepolis Fortification Texts (Achaemenid History 14), Leiden.

Herbordt, S. (2005): Die Prinzen- und Beamtensiegel der hethitischen Großreichszeit auf Tonbullen aus dem Nişantepe-Archiv in Hattuša (BoHa 22), Mainz.

Herbordt, S. / D. Bawanypeck / J. D. Hawkins (2011): Die Siegel der Großkönige und Großköniginnen auf Tonbullen aus dem Nişantepe-Archiv in Hattuša (BoHa 23), Darmstadt – Mainz.

Houston, S. D. (2000): Into the Minds of Ancients. Advances in Maya Glyph Studies, Journal of World Prehistory 14, 121–201.

Hunger, H. (2009): Schreiber. C. Im 2. und 1. Jahrtausend. In: RlA 12, 269–273.

Kahl, J. (2003): Entwicklung der frühen Hieroglyphenschrift. In: W. Seipel (ed.), Der Turmbau zu Babel. Ursprung und Vielfalt von Sprache und Schrift. Band IIIA–B: Schrift, Graz, 127–131 (Bd. IIIA), 103–114 (Band IIIB).

Kienast, B. (1984): Das altassyrische Kaufvertragsrecht (FAOS Beih. 1), Stuttgart.

Klinger, J. (2007): Die Hethiter, München.

Kryszat, G. (2008): The Use of Writing among the Anatolians. In: J. G. Dercksen (ed.), Anatolia and the Jazira During the Old Assyrian Period (PIHANS 111), Leiden, 231–238.

Landsberger, B. (1948): Sam'al. Studien zur Entdeckung der Ruinenstaette Karatepe, Ankara.

Larsen, T. M. (2010): The Archive of the Šalim-Aššur Family, Ankara.

Melchert, H. C. (2005): The Problem of Luvian Influence on Hittite. In: G. Meiser / O. Hackstein (eds.), Sprachkontakt und Sprachwandel. Akten der XI. Fachtagung der Indogermanischen Gesellschaft. 17.–23. September 2000. Halle an der Saale, Wiesbaden, 445–460.

Meriggi, P. (1966): Vermutliche hieroglyphisch-hethitische Siegel aus der Ägäis, Kadmos 5, 58–60.

Michel, C. (2011): The Private Archives from Kaniš Belonging to Anatolians, AoF 38, 94–115.

Michel, C. (1991): Innāya dans les tablettes paléo-assyriennes, Paris.

Mora, C. (1987): La glittica anatolica del II millennio a.C. Classificazione tipologica I–III (StMed 6), Pavia.

Mora, C. (1991): Sull'origine della scrittura geroglifica anatolica, Kadmos 30, 1–28.

Mora, C. (2007): I testi ittiti di inventario e gli 'archivi' di cretule. Alcune osservazioni e riflessioni. In: D. Groddek / M. Zorman (eds.), Tabularia Hethaeorum. Hethitologische Beiträge Silvin Košak zum 65. Geburtstag (DBH 25), Wiesbaden, 535–550.

Mouton, A. (2002): Glyptique cappadocienne et hieroglyphes, SMEA 44, 83–113.

Otten, H. (1964): Schrift, Sprache und Literatur der Hethiter. In: G. Walser (ed.), Neuere Hethiterforschung, 11–22.

Özgüç, N. / Ö. Tunca (2001): Kültepe-Kaniš. Mühürlü ve yazıtlı kil bullalar / Sealed and Inscribed Clay Bullae, Ankara.

Özgüç, T. (1954): Kültepe'de 1953 Yılında Yapılan Kazılar / Die Grabungen von 1953 in Kültepe, Belleten 18, 373–390.

Özgüç, T. (1995): Two Eagle-shaped Cult Vessels Discovered in Kanish. In: R. Dittmann / H. Hauptmann (eds.), Beiträge zur Kulturgeschichte Vorderasiens. Festschrift für Rainer Michael Boehmer, Mainz, 521–525.

Payne, A. (2008): Writing Systems and Identity. In: B. J. Collins et al. (eds.), Anatolian Interfaces. Hittites, Greeks and their Neighbours. Proceedings of an International Conference on Cross-Cultural Interaction. September 17–19, 2004, Oxford, 117–122.

Popko, M. (2007): Zu den Datierungsfragen in der Hethitologie. In: D. Groddek / M. Zorman (eds.), Tabularia Hethaeorum. Hethitologische Beiträge Silvin Košak zum 65. Geburtstag (DBH 25), Wiesbaden, 575–581.

Pulak, C. (2005): Who Were the Mycenaeans Aboard the Uluburun Ship? Aegaeum 25, 295–312.

Rieken, E. (2006): Zum hethitisch-luwischen Sprachkontakt in historischer Zeit, AoF 33, 271–285.

Sampson, G. (1985): Writing Systems. A Linguistic Introduction, Stanford.

Schachner, A. (2011): Hattuscha. Die Hauptstadt der Hethiter, München.

Schwemer, D. (2005/6): Lehnbeziehungen zwischen dem Hethitischen und dem Akkadischen, AfO 51, 220–234.

Sever, H. (1997): Amūtum Madeninin Ticaretinin Yapılması Hususanda, Asur Şehir Meclisince Verilmiş Bir Ruhsatnâme, ArAn 3, 291–299.

Shaked, S. (2004): Le satrape de Bactriane et son gouverneur. Documents araméens du IVe s. avant notre ère provenant de Bactriane (Persika 4), Paris.

Shear, I. M. (1998): Bellerophon Tablets from the Mycenaean World? A Tale of Seven Bronze Hinges, Journal of Hellenic Studies 118, 187–189.

Stauder, A. (2010): The Earliest Egyptian Writing. In: C. Woods (ed.), Visible Language. Invention of Writing in the Ancient Middle East and Beyond, Chicago, 137–147.

Trigger, B. G. (2004): Writing Systems. A Case Study in Cultural Evolution. In: S. D. Houston (ed.), The First Writing. Script Invention as History and Process, Cambridge, 39–68.

Ulshöfer, A. M. (1995): Die altassyrischen Privaturkunden (Altassyrische Texte und Untersuchungen 4 / FAOS Beih.), Stuttgart.

Ünal, A. (1989): Drawings, Graffiti and Squiggles on the Hittite Tablets. Art in Scribal Circles. In: K. Emre et al. (eds.), Anatolia and the Ancient Near East. Studies in Honor of Tahsin Özgüç, Ankara, 505–513.

van den Hout, Th. P. J. (2006): Institutions, Vernaculars, Publics. The Case of Second-Millennium Anatolia. In: S. Sanders (ed.), Margins of Writing, Origins of Cultures, Chicago, 217–256.

van den Hout, Th. P. J. (2009): A Century of Hittite Text Dating and the Origins of the Hittite Cuneiform Script, Incontri Linguistici 32, 11–35.

van den Hout, Th. P. J. (2010): LÚDUB.SAR.GIŠ = "Clerk"? Or 79, 255–267.

van den Hout, Th. P. J. (2011): The Hittite Empire from Textual Evidence, in: S. R. Steadman / G. McMahon (eds.), The Oxford Handbook of Ancient Anatolia, Oxford, 900–913.

Veenhof, K. R. (1972): Aspects of Old Assyrian Trade and its Terminology (Studia et documenta 10), Leiden.

Veenhof, K. R (1995): Old Assyrian *iṣurtum*, Akkadian *eṣērum* and Hittite GIŠ.ḪUR. In: Th. P. J van den Hout / J. de Roos (eds.), *Studio historiae ardens*. Ancient Near Eastern Studies Presented to Philo H. J. Houwink ten Cate on the Occasion of his 65th Birthday (PIHANS 74), Leiden, 311–332.

Veenhof, K. R. (2010): Ankara Kültepe Tabletleri, Ankara.

Veenhof, K. R. / J. Eidem (2008): Mesopotamia. The Old Assyrian Period (Annäherungen 5. OBO 160/5), Fribourg – Göttingen.

Waal, W. J. I. (2011): They Wrote on Wood. The Case for a Hieroglyphic Scribal Tradition in Hittite Anatolia, AnSt 61, 21–35.

Waal, W. J. I. (forthcoming a): Changing Fate. Hittite GUL-*š*-, C. Luwian GUL-*zāi*-, H. Luwian REL-*za* and the *Kuwanšeš*-deities. In: Proceedings of the 8th International Conference of Hittitology, Warsaw 2011.

Waal, W. J. I. (forthcoming b): Anatolian Hieroglyphs on Hittite Clay Tablets. In: Festschrift for NN.

Weeden, M. (2011): Hittite Logograms and Hittite Scholarship (StBoT 54), Wiesbaden.

Wilhelm, G. (2007): Ausgewählte Texte der Kampagne 2006. In: A. Schachner, Die Ausgrabungen in Boğazköy-Ḫattuša, ArchAnz 2007, 86–90.

Woodard, R. (1997a): Greek Writing from Knossos to Homer, Oxford.

Woodard, R. (ed.) (1997b): The Cambridge Encyclopedia of the World's Ancient Languages, Cambridge.

Woods, C. (2010): Visible Language. The Earliest Writing Systems. In: C. Woods (ed.), Visible Language. Invention of Writing in the Ancient Middle East and Beyond, Chicago, 15–25.

Yakubovich, I. (2008): Hittite-Luvian Bilingualism and the Origin of the Anatolian Hieroglyphs, Acta Linguistica Petropolitana 4, 9–36.

Yakubovich, I. (2010): Sociolinguistics of the Luvian Language (Brill's Studies in Indo-European Languages & Linguistics 2), Leiden – Boston.

Yoshida, D. (2002): Ein altassyrischer Text aus Kaman-Kalehöyük, Anatolian Archaeological Studies 11, 133–137.

Willemijn Waal
Leiden University (Leiden Institute for Area Studies)
P.O. Box 9515
2300 RA Leiden
w.waal@hum.leidenuniv.nl